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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,915	07/23/2003	Andrew Wells Phelps	UVD 0280 IA/UD 268	3052
7590 07/25/2006			EXAMINER	
Killworth, Gottman, Hagan & Schaeff, L.L.P.			ZHENG, LOIS L	
Suite 500			ART UNIT	
One Dayton Centre			PAPER NUMBER	
Dayton, OH 45402-2023			1742	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,915

Applicant(s)

PHELPS ET AL.

Examiner

Lois Zheng

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 37-40, 43-46 and 163 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13, 37-40, 43-46 and 163 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/21/06, 4/14/06, 7/12/06

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims 1 and 163 are amended in view of the amendment filed 11 May 2006. Therefore, claims 1-13, 37-40, 43-46 and 163 are currently under examination.

Terminal Disclaimer

2. The terminal disclaimer filed on 11 May 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 10/625,886 has been reviewed and is accepted. The terminal disclaimer has been recorded.

The rejections of claims 1-13, 37-40, 43-46 and 163 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11, 35-38, 41-47, 51-55 and 137 of copending Application No. 10/625,886 are withdrawn in view of the terminal disclaimer.

3. The terminal disclaimer filed on 11 May 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 10/625,885 has been reviewed and is accepted. The terminal disclaimer has been recorded.

The rejections of claims 1-13, 37-40, 43-46 and 163 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 8-12, 36-39, 43-45 and 102 of copending Application No. 10/625,885 are withdrawn in view of the terminal disclaimer.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-5, 8-9, 11-13, 37-40 and 163 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT publication WO 98/48075.

Tadokoro et al. US 6,200,672 B1(Tadokoro) is the national stage entry of the PCT publication document WO 98/48075, which is in Japanese. Therefore, the examiner will use the teachings of Tadokoro for the rejection of the instant claims in this Office Action.

Tadokoro teaches an aqueous metal surface treatment fluid comprising a rare earth element such as tetravalent cerium(col. 5 lines 6-9) and oxyacid anions such as phosphate, tungstate, vanadate anions, wherein the rare earth metal elements and the oxyacid anions form oxyacid compounds(col. 9 lines 28-33). Tadokoro further teaches a rare earth metal complex comprising rare earth elements such as tetravalent cerium and an inorganic compounds such as phosphates, nitrates and sulfates(col. 5 lines 27-31).

Regarding claims 1 and 11-13, the tetravalent cerium of Tadokoro reads on the claimed rare earth element and the phosphate, tungstate, vanadate, sulfate and nitrate of Tadokoro read on the claimed inorganic valence stabilizer. The oxyacid compound

Art Unit: 1742

or the rare earth metal complex of Tadokoro reads on the rare earth/valence stabilizer complex as claimed.

With respect to the amended feature of a solid conversion coating formed on a metal substrate, the coating layer formed on the metal substrate as a result of applying the coating composition of Tadokoro is a solid conversion coating layer as claimed.

Regarding claim 163, Tadokoro further teaches that the solubility of the rare earth metal complex is no greater than 0.01 mol/l(col. 5 lines 36-38). Since about 25°C reads on room temperature and 760Torr is atmospheric pressure, the examiner asserts that the solubility as taught by Tadokoro reads on the limitation of the rare earth/valence stabilizer complex being sparingly soluble as claimed.

Regarding claim 4, since Tadokoro teaches the claimed rare earth/valence stabilizer, the electrostatic barrier layer around the rare earth/valence stabilizer complex is inherent present as claimed.

Regarding claim 5, since Tadokoro teaches the claimed rare earth/valence stabilizer complex, the function of the rare earth/valence stabilizer complex as an ion exchange agent towards corrosive ions is inherent.

Regarding claim 8, Tadokoro further teaches the coated metal surface can be further covered by an over coat layer(col. 10 lines 35-38). Since Tadokoro teaches the same rare earth/valence stabilizer complex as claimed in its coating fluid, the coating solution of Tadokoro inherently has the same adhesion enhancing morphology as claimed.

Art Unit: 1742

Regarding claim 9, since the oxyacid compound of Tadokoro reads on the claimed rare earth/valence stabilizer, the examiner asserts that the rare earth/valence stabilizer as taught by Tadokoro inherently has a central cavity containing cerium as claimed. In addition, since specifics of the additional ions are not recited in the claim, any ions, such as impurities in the cavity of the rare earth metal complex, can read on the claimed additional ion.

Regarding claims 37-40, Tadokoro teaches the presence of cerium ions which read on the claimed cationic solubility control agent. Tadokoro further teaches the presence of calcium, zinc, lanthanum, hydrogen, zirconium and titanium ions(col. 10 lines 9-18) which also read on the claimed cationic solubility control agent.

6. Claims 1, 4-5, 8-9, 11-13, 37-40, 43-45 and 163 are rejected under 35 U.S.C. 102(b) as being anticipated by DePue et al. US 5,322,560(DePue).

DePue teaches a slightly water soluble corrosion inhibitor compound in an aqueous solution for treating aluminum flake pigment(abstract). The corrosion inhibitor compound comprises a rare earth metal such as tetravalent cerium(col. 2 lines 55-60), a silicon salt and a metal oxo-complexes of Ti, V, Cr, Zr, Nb, Mo, Hf, Ta and W(col. 2 lines 27-36, col. 3 lines 17-22).

Regarding claims 1, 11-13 and 163, the tetravalent cerium as taught by DePue reads on the claimed rare earth element and the oxo-complexes of Ti, V, Cr, Zr, Nb, Mo, Hf, Ta and W reads on the claimed inorganic valence stabilizer. In addition, since the corrosion inhibiting compound of DePue is slightly soluble in water, it meets the limitation of "sparingly soluble in water at about 25°C and about 760Torr" as recited in

instant claim 163. Therefore, the claimed rare earth/valence stabilizer complex is inherently present in the corrosion inhibiting compound of DePue.

With respect to the amended feature of a solid conversion coating formed on a metal substrate, the coating layer formed on the metal substrate as a result of applying the coating composition of DePue is a solid conversion coating layer as claimed.

Regarding claims 4-5, since DePue teaches the inherently teaches the claimed rare earth/valence stabilizer complex, the claimed electrostatic barrier layer is also inherently present around the rare earth/valence stabilizer complex of DePue as recited in instant claim 4. The rare earth/valence stabilizer complex of DePue is also inherently capable of acting as an ion exchange agent towards corrosive ions as recited in instant claim 5.

Regarding claim 8, DePue further teaches the coated metal surface can be further covered by a clear over coat layer(col. 6 lines 61-63). Since DePue teaches the same rare earth/valence stabilizer complex as claimed in its coating fluid, the coating solution of Tadokoro inherently has the same adhesion enhancing morphology as claimed.

Regarding claim 9, since DePue teaches the claimed rare earth/valence stabilizer complex, it also inherently teaches the central cavity containing cerium as recited in instant claim 9. In addition, since specifics of the additional ions are not recited in the claim, any ions, such as impurities in the cavity of the rare earth metal complex, can read on the claimed additional ion.

Regarding claims 37-40, DePue further teaches the presence of Na ions from the metal oxo-complexes(col. 3 lines 17-22), which reads on the cationic solubility control agent as claimed. In addition, the Ce, Ti, Zr, V, Cr, W, Mo, Nb, Hf, Ta as taught by DePue also read on the claimed cationic solubility control agent.

Regarding claim 43, DePue teaches that the coating prepared by applying the corrosion inhibiting compound contains is colored as claimed.

Regarding claims 44-45, DePue further teaches a color brightener(col. 6 lines 12-28) which read on the agent for improving color-fastness.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
8. Claims 2-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tadokoro.

The teachings of Tadokoro are discussed in paragraph 5 above.

Regarding claims 2-3, Tadokoro further teaches that the solubility of the rare earth metal complex is no greater than 0.01 mol/l(col. 5 lines 36-38). Since about 25°C reads on room temperature and 760Torr is atmospheric pressure, the examiner asserts that the solubility of no greater than 0.01 mol/l as taught by Tadokoro overlaps the solubility of about 5×10^{-1} and about 1×10^{-5} mol/l as recited in instant claim 2 and the solubility of about 5×10^{-2} and about 5×10^{-5} mol/l as recited in instant claim 3. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed solubility from the solubility of Tadokoro would have been obvious

Art Unit: 1742

to one of ordinary skill in the art since Tadokoro teaches the same utilities in its disclosed solubility range.

Regarding claims 6-7, Tadokoro further teaches that the coating thickness is 0.1 microns to 10 microns(col. 10 lines 27-34) which overlaps the claimed about 25-10,000 nanometers as recited in instant claim 6 and the claimed about 100-500 nanometers as recited in instant claim 7. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating thickness from the coating thickness of Tadokoro would have been obvious to one of ordinary skill in the art since Tadokoro teaches the same utilities in its disclosed coating thickness range.

9. Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tadokoro in view of Dattilo US 6,291,018 B1(Dattilo).

The teachings of Tadokoro are discussed in paragraphs 5 and 8 above. However, Tadokoro does not explicitly teach an agent to improve color-fastness as claimed.

Dattilo teaches a metal surface treatment coating composition comprising color pigments such as carbon black and phthalocyanines(col. 5 lines 34-41).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated color pigments such as carbon black and phthalocyanines as taught by Dattilo into the coating composition of Tadokoro in order to provide decorative effect to the coating formed as taught by Dattilo(col. 5 lines 34-38).

Therefore, the coating composition of Tadokoro in view of Dattilo is colored as recited in instant claim 43 and also comprises an agent that improves color-fastness as

Art Unit: 1742

recited in instant claim 44. Color pigments such as carbon black and phthalocyanines as taught by Tadokoro in view of Dattilo also read on the claimed active UV blocker as recited in instant claims 45-46.

10. Claims 2-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over DePue.

The teachings of DePue are discussed in paragraph 6 above.

Regarding claims 2-3, DePue further teaches the solubility of the corrosion inhibiting compound is no more than 10^{-3} m/l(col. 3 lines 4-6), which overlaps the solubility of about 5×10^{-1} and about 1×10^{-5} mol/l as recited in instant claim 2 and the solubility of about 5×10^{-2} and about 5×10^{-5} mol/l as recited in instant claim 3.

Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed solubility from the solubility of DePue would have been obvious to one of ordinary skill in the art since DePue teaches the same utilities in its disclosed solubility range.

Regarding claim 6, DePue further teaches that the coating thickness is about 1-150 microns(col. 6 lines 57-58), which encompasses the claimed about 25-10,000 nanometers as recited in instant claim 6. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating thickness from the coating thickness of Tadokoro would have been obvious to one of ordinary skill in the art since Tadokoro teaches the same utilities in its disclosed coating thickness range.

11. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over DePue in view of Dattilo US 6,291,018 B1(Dattilo).

The teachings of DePue are discussed in paragraphs 6 and 10 above. However, DePue does not explicitly teach an agent to improve color-fastness as claimed.

Dattilo teaches a metal surface treatment coating composition comprising color pigments such as carbon black and phthalocyanines(col. 5 lines 34-41).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated color pigments such as carbon black and phthalocyanines as taught by Dattilo into the corrosion inhibiting compound of DePue in order to provide decorative effect to the coating formed as taught by Dattilo(col. 5 lines 34-38).

Allowable Subject Matter

12. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments filed 11 May 2006 have been considered but are partially moot in view of the new ground(s) of rejection.

Applicant argues that Tadokoro teaches a complex between a rare earth element and an organic compound and the inorganic compound it only added as a ligand.

The examiner does not find applicant's argument persuasive since Tadokoro teaches that the rare earth metal complex also contains an inorganic compound as a ligand(col. 5 lines 24-27). Therefore, Tadokoro seems to include the inorganic compound, even though function as a ligand, as part of the rare earth metal complex.

Art Unit: 1742

Applicant also argues that neither Tadokoro nor DePue teaches a conversion coating.

The examiner does not find applicant's argument persuasive since Tadokoro's coating composition comprises organic and inorganic phosphoric acid compounds containing phosphate, which would have caused at least some reaction with the underlying metal surface. Therefore, the solid coating as taught by Tadokoro reads on a conversion coating based on the broadest reasonable interpretation. In addition, the water soluble salt in the coating composition of DePue would also have caused, at least some reaction with the underlying metal surface. Therefore, the solid coating as taught by DePue reads on the claimed conversion coating based on the broadest reasonable interpretation.

Applicant further argues that neither Tadokoro nor DePue teach the use of solubility control agents as claimed.

The examiner does not find applicant's argument persuasive since Tadokoro teaches the claimed cerium, calcium, zinc, lanthanum, hydrogen, zirconium and titanium ions present in its coating composition and DePue teaches presence of Na, Ce, Ti, Zr, V, Cr, W, Mo, Nb, Hf, Ta ions in the coating composition. Therefore, these ions would inherently function as a solubility control agent to the same degree in the prior art as in the claimed invention.

Applicant further argues that DePue teaches a soluble rare earth metal salt, not a rare earth metal complex as claimed.

Art Unit: 1742

The examiner does not find applicant's argument persuasive since DePue teaches a slightly water soluble corrosion inhibitor compound which is a product of a rare earth metal salt, a metal oxo-complex and a silicon salt. The rejection ground is based on this slightly water soluble corrosion inhibitor compound in an aqueous solution as taught by DePue, which read on the claimed rare earth metal/valence stabilizer complex.

Applicant further argues that DePue does not teach the claimed agent for improving color fastness.

The rheology control agent as taught by DePue controls the metallic appearance of the coating and maximizes the brightness and the darkness of the coating by fixing the pigment flake surface in an alignment parallel to the surface. Therefore, the rheology control agent as taught by DePue ultimately enhances the color of the coating, which leads the examiner to conclude that the rheology control agent is a color brightener that would read on the claimed agent for color fastness.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 1742


mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LLZ


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